

ABSTRACT OF THE DISCLOSURE

An ion beam deposition target source consisting of a removable, centrally located inner insert surrounded by an outer region. The insert can be removed and replaced when eroded, while the outer region of the target source not eroded by the ion beam remains in place attached to a backing plate. The inner insert and the outer region are joined to each other by an interface comprising an interlocking lip or grove structure located on opposing mating surfaces on the inner insert and outer region, thereby forming the deposition target source when these components are united. The deposition target source can be attached by a bonding layer to a backing plate which is installed into an ion beam deposition machine.